

-2- (WPAT)
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XRAM- C92-055454
TI - Treatment of ammonium nitrate contg. waste water - by adding
organic material, pyrolysing in presence of catalyst supporting
noble metal and wet oxidising using oxygen contg. gas
DC - C07 D15
PA - (OSAG) OSAKA GAS CO LTD
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AB - JP04061987 A

Translation of Claims

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Claims:

- (1) A method of treating waste water containing ammonium nitrate, characterized in that waste water containing ammonium nitrate with organic substances added in order to satisfy the condition $0.1 < \text{organic substances}/\text{NO}_3\text{-N} \leq 0.5$ (molar ratio) is treated by wet thermal decomposition at a pH of approximately 1-11.5 and a temperature of 100-370°C, in the presence of a supported catalyst the active ingredient of which consists of at least one member of a group comprising noble metals, their insoluble or hardly-soluble compounds, and base metals, and with essentially no oxygen present, after which the treated liquid is treated by wet oxidation at a pH of approximately 1-11.5 and a temperature of 100-370°C, in the presence of a supported catalyst the active ingredient of which consists of at least one member of a group comprising noble metals, their insoluble or hardly-soluble compounds, and base metals, and in the presence of a gas containing oxygen at 1-1.5 times the theoretical quantity of oxygen needed to decompose the ammonia, organic substances, and inorganic substances in the treated liquid.
- (2) A method of treating waste water containing ammonium nitrate, characterized in that waste water containing ammonium nitrate with organic substances added in order to satisfy the condition $0.1 < \text{organic substances}/\text{NO}_3\text{-N} \leq 0.5$ (molar ratio), and ammonia added in order to satisfy the condition $0.1 < \text{NH}_3\text{-N}/\text{NO}_3\text{-N} \leq 2$ (molar ratio), is treated by wet thermal decomposition at a pH of approximately 1-11.5 and a temperature of 100-370°C, in the presence of a supported catalyst the active ingredient of which consists of at least one member of a group comprising noble metals, their insoluble or hardly-soluble compounds, and base metals, and with essentially no oxygen present, after which the treated liquid is treated by wet oxidation at a pH of approximately 1-11.5 and a temperature of 100-370°C, in the presence of a supported catalyst the active ingredient of which consists of at least one member of a group comprising noble metals, their insoluble or hardly-soluble compounds, and base metals, and in the presence of a gas containing oxygen at 1-1.5 times the theoretical quantity of oxygen needed to decompose the ammonia, organic substances, and inorganic substances in the treated liquid.
- (3) A method of treating waste water containing ammonium nitrate, characterized in that waste water containing ammonium nitrate with organic substances added in order to satisfy the condition $0.1 < \text{organic substances}/\text{NO}_3\text{-N} \leq 0.5$ (molar ratio), and at least one acid or acid product added, is treated by wet thermal decomposition at a pH of approximately 1-11.5 and a temperature of 100-370°C, in the presence of a supported catalyst the active ingredient of which consists of at least one member of a group comprising noble metals, their insoluble or hardly-soluble compounds, and base metals, and with essentially no oxygen present, after which the treated liquid is treated by wet oxidation at a pH of approximately 1-11.5 and a temperature of 100-370°C, in the presence of a supported catalyst the active ingredient of which consists of at least one member of a group comprising noble metals, their insoluble or hardly-soluble compounds, and base metals, and in the presence of a gas containing oxygen at 1-1.5 times the theoretical quantity of oxygen needed to decompose the ammonia, organic substances, and inorganic substances in the treated liquid.

(4) A method of treating waste water containing ammonium nitrate, characterized in that waste water containing ammonium nitrate with organic substances added in order to satisfy the condition $0.1 < \text{organic substances}/\text{NO}_3\text{-N} \leq 0.5$ (molar ratio), ammonia added in order to satisfy the condition $0.1 < \text{NH}_3\text{-N}/\text{NO}_3\text{-N} \leq 2$ (molar ratio), and at least one acid or acid product added, is treated by wet thermal decomposition at a pH of approximately 1-11.5 and a temperature of 100-370°C, in the presence of a supported catalyst the active ingredient of which consists of at least one member of a group comprising noble metals, their insoluble or hardly-soluble compounds, and base metals, and with essentially no oxygen present, after which the treated liquid is treated by wet oxidation at a pH of approximately 1-11.5 and a temperature of 100-370°C, in the presence of a supported catalyst the active ingredient of which consists of at least one member of a group comprising noble metals, their insoluble or hardly-soluble compounds, and base metals, and in the presence of a gas containing oxygen at 1-1.5 times the theoretical quantity of oxygen needed to decompose the ammonia, organic substances, and inorganic substances in the treated liquid.